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(54) Cutting head for a string trimmer

Schneidekopf für einen Fadenschneider

Tête de coupe pour tondeuse à fil

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- **PATENT ABSTRACTS OF JAPAN vol. 015, no. 197 (C-0833), 21 May 1991 (1991-05-21) -& JP 03 053807 A (SUGIHARA RINKI KK), 7 March 1991 (1991-03-07)**

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Description

[0001] The present invention relates to a string trimmer and in particular, a cutting head for a string trimmer.

[0002] In standard designs of string trimmer, a cutting head is rotatably mounted on one end of an elongate shaft. The cutting head normally comprises a base mounted onto a shaft which is rotatably driven by a motor either mounted adjacent the cutting head or the opposite end of the elongate shaft to that of the cutting head. The base is in the form of a cup. A spool is located within the cup of the base. A cap releasably attaches to the base to seal the spool in the base. Many string trimmers comprise automatic line feed mechanisms which enable the spool to rotate in relation to the base to allow cutting line wrapped around the spool to be fed out as the cutting head rotates when the line which extends from the cutting head breaks due to wear and tear. In existing designs of autofeed mechanisms, the autofeed mechanisms interact between the base of the cutting head and the spool. EP 0 417 966, EP 0 417 967 and EP 0838 144 all disclose such mechanisms.

[0003] US-A-5,522,141 describes a cutting head for a string trimmer which has both an automatic feed and a bump feed (or "tap and go") line feeding system. In the various embodiments of this patent, the automatic feed system is provided at the interface of the spool carrying the cutting line and the portion of the cutting head which is mounted to the body of the trimmer. The bump feed system is in contrast provided at the interface of the spool and the cap of the cutting head.

[0004] The problem with such designs is that it is difficult for the operator to change the cutting head when the existing spool is empty. The operator removes the cap from the base and then removes the old empty spool. The operator then has to insert a new spool into the base. However, this is a fiddly operation as the operator has to align the spool in a particular manner so as to engage the autofeed mechanism with the spool. Often the line tries to unravel itself during this operation - due to the resistance of line. Furthermore, the end of the cutting line has to be fed through an aperture formed in the base. Another problem is that the same autofeed mechanism is utilised for every new spool of line. Thus, it becomes worn due to constant usage and can get damaged each time the spool is replaced.

[0005] The present invention overcomes or at least reduces the effects of the above problems.

[0006] According to a first aspect of the present invention, there is provided a cutting head for a string trimmer comprising a base, a cap, a spool rotatably mounted in the cap, an autofeed mechanism mounted within the cap and which interacts between the cap and the spool, wherein the cap is releasably attachable to the base, wherein the autofeed mechanism comprises a pivotal arm pivotally mounted in the cap and which engages with the spool, the pivotal arm is pivotally mounted on the base of the cap and engages with the underside of the spool, and the pivotal arm comprises a peg which engages with a wavy trough formed on the underside of the spool.

[0007] Such a construction enables the operator to simply disconnect the cap from the base and discard it. The operator then attaches a new cap which would include the spool and autofeed mechanism already assembled and ready to be used. A new autofeed system is therefore used for each new spool. All complicated assembly and necessary alignments are avoided which further avoids any possibility of damage to the autofeed mechanism.

[0008] The cap can also comprise at least one aperture through which, in use, an end of the cutting line extends from the spool. Eyelets can form the apertures.

[0009] By including the apertures on the cap, the need to feed the end of the cutting line through an exit hole on a cutting head is dispensed with thus yet further simplifying the task.

[0010] In a preferred embodiment, the present invention also provides a string trimmer comprising an elongate shaft and a cutting head according to the first aspect of the invention which is rotatably mounted on one end of the elongate shaft.

[0011] According to a second aspect of the present invention, there is provided a cassette mechanism capable of releasably attaching to a base of a cutting head on a string trimmer, the cassette mechanism comprising, a cap, a spool rotatably mounted in the cap, an autofeed mechanism mounted within the cap and which interacts between the cap and the spool, wherein the cap is capable of releasably attaching to a base of a cutting head of a string trimmer, wherein the autofeed mechanism comprises a pivotal arm pivotally mounted in the cap and which engages with the spool, the pivotal arm is pivotally mounted on the base of the cap and engages with the underside of the spool, and the pivotal arm comprises a peg which engages with a wavy trough formed on the underside of the spool.

[0012] An embodiment of the present invention will now be described, with reference to the accompanying drawings, of which:

Figure 1 shows a perspective view of a string trimmer;
Figure 2 shows a perspective view of the base of the cutting head;
Figure 3 shows a perspective view of the cap of the cutting head;
Figure 4 shows a top view of the cap with the pivotal arm mounted in the cap;
Figure 5 shows a perspective view of the spool;
Figure 6 shows a vertical cross-section of the cutting head mounted on the spindle of the motor;
Figure 7 shows a top view of the base of the cutting head;
Figure 8 shows a vertical cross-section of the base indicated by Arrow A in Figure 7;

Figure 9 shows a vertical cross-section of the base indicated by Arrow E in Figure 7;
Figure 10 shows a side view of the base;
Figure 11 shows a side view of the base 90° to that of Figure 10;
Figure 12 shows a bottom view of the base;
Figure 13 shows a side view of the cap;
Figure 14 shows a vertical cross-sectional view of the cap;
Figure 15 shows a vertical cross-sectional view of the cap orientated 90° to Figure 14;
Figure 16 shows a side view of the cap 90° to that of Figure 15;
Figure 17 shows a vertical cross-sectional view of the spool;
Figure 18 shows the base of the spool; and
Figure 19 shows a vertical cross-section of the cassette.

[0013] Figure 1 shows a string trimmer comprising an elongate shaft (2) having at one end a rear handle (4) and at the other end a motor housing (6). Mounted within the motor housing (6) is an electric motor (8) which rotatingly drives a cutting head (10) which is mounted on the spindle (12) of the electric motor (8). Connected to the base of the motor housing is a guard (14). Two cutting lines (16,18) extend from the side of the cutting head (10) in radially opposite directions. When the electric motor (8) is activated, the spindle (12) and hence cutting head (10) rotate causing the two cutting lines (16,18) to extend outwardly in a horizontal plane in radially opposite directions. The guard (14) surrounds the path swept out by the two cutting lines (16,18) as they rotate.

[0014] The cutting head (10) shall now be described in more detail. The cutting head (10) comprises the following component parts: a base (20) as best shown in Figure 2; a cap (22) as best shown in Figure 3; a pivotal arm (24) which is mounted inside the cap (22) as best shown in Figure 4; and a spool (26) as best shown in Figure 5 which is mounted within the cap (22) in engagement with the pivotal arm (24).

[0015] The base (20) of the cutting head (10) is rigidly mounted onto the spindle (12) of the electric motor (8) as best shown in Figure 6. The base comprises a plurality of fins (28) formed on the top of the base (20) as shown in Figure 2.

[0016] Figure 7 shows a view of a base (20) from above. Figure 8 shows a vertical cross-section of the base through a section of the base indicated by the arrows A in Figure 7. Figure 9 shows a vertical cross-section of the base indicated by the arrows E in Figure 7.

[0017] The base comprises a disc (30) around the periphery of which is formed a wall (32) which extends downwardly. The fins (28) are mounted on the opposite side of the disc to that of the wall (32). A central core (34) is formed in the middle of the disc (30) which extends downwardly parallel to the wall as best shown in Figure 3. As can be seen in Figure 6, the spindle (12) of the motor (8) extends into a bore (36) formed in the central core (34) of the base (20). Splines (38) extend along the length of the spindle (12) and which engage with the walls of the bore (36) of the core (34) of the base (20). Thus the base is rigidly attached to the spindle so that when the spindle rotates the base (20) similarly rotates. The fins (28) draw air downwardly through the motor housing past the motor (8) and expel it sidewards substantially perpendicular to the axis of rotation of the motor (8) in order to cool the motor (8).

[0018] The cap (22) of the cutting head (10) is cup shaped having a central spindle (44) which projects from the base (46) of the cap (22) as best shown in Figure 3. The spindle (44) is tubular. The height of the peripheral wall of the cap (22) around the perimeter varies around the periphery. At two points (50) semicircular notches are formed in which eyelets (52) are inserted as best shown in Figure 16. Located symmetrically between the eyelets (52) are two resilient clips (54) which project upwardly parallel to the spindle (44) as best shown in Figure 3. The two clips (54) which are located opposite to each other are capable of being deformed inwardly as indicated by arrows Z. A rib (42) is formed at the end of each of the resilient clips (54). Part (56) of the clips (54) is formed as a finger pressure point. Two holes (40) are formed in the wall (32) of the base (20) which are capable of receiving the ribs (42) formed on the cap (22).

[0019] The spool (26) as shown in Figure 5 comprises two line retaining sections (60). Figure 17 shows a vertical cross-section of the spool. The spool (26) has a central core (62). A wavy trough (64) is formed in the base (66) of the spool (26) as best shown in Figure 18.

[0020] A pivotal arm (24) is mounted on the base (46) of the cap and is capable of pivoting around a small protrusion (70) which projects from the base (46) of the cap (22) as shown in Figure 4. The pivotal arm (24) is capable of pivoting through an angular range of movements indicated by arrow Y in Figure 4. On one end of the pivotal bar (24) is a peg (72) which projected upwardly from the pivotal bar (24) away from the base (46) of the cap (22). A plurality of plastic notches (74) are formed on the opposite side of the base (46) of the cap (22) to that of the pivotal bar (24) in order to counteract the additional weight of the pivotal bar (24) when the cutting head (10) rotates to ensure that the cutting head (10) remains stable.

[0021] When the spool (26) is mounted within the cap (22) the central core (62) is slid onto the central spindle (44) of the cap (22), the spool clipping onto the central spindle (44) thus preventing axial movement of the spool (26) along the longitudinal axis of the spindle (44). The peg (72) of the pivotal arm (24) locates within the trough (64) formed on the base (66) of the spool (26). The spool (26) is capable of freely rotating about the central spindle (44) of the cap (22), the rotational movement only being hindered by the interaction between the peg (72) on the pivotal arm (24) and the trough (64) formed on the underside of the spool (26). The pivotal arm (26) and the

wavy trough (64) act as an autofeed mechanism allowing the line (80) stored on the spool (26) to be paid out when the cutting head is rotating during normal use when the line breaks.

[0022] The autofeed mechanism operates in the same manner as that disclosed in EP 0 417 966 and EP 0 417 967. The pivotal arm (24) has a centre of mass indicated by "C" in Figure 4. As the cutting head (10) rotates, a biasing force in the direction X is exerted onto the pivotal arm (24) due to the centrifugal which acts on the arm at the centre of mass. This results in a clockwise rotational force being exerted onto the pivotal arm (24). As the cutting head (10) rotates, a centrifugal force is also exerted onto the length of cutting line which extends from the cutting head (10). This results in the line trying to unwind from the spool resulting in the spool rotating relative to the cap. The only thing which stops the spool rotating relative to the cap is the peg (72) on the pivotal arm (24) which engages with the trough (64) formed on the base of the spool. The centrifugal force applied to the line is dependent on the length of the line.

[0023] In normal operation, the pivotal arm (24) is located in a position whereby the end of the pivotal arm (24) with the peg (72) is held inwardly due to the peg (72) engaging with one of the notches (74) formed in the trough (64). The notch (74) in the trough (64) held in engagement with the peg (72) due to rotational force exerted on the spool (26) generated by centrifugal force applied to the cutting lines (16,18) due to the cutting head (10) rotating. In order for the peg (72) to disengage from a notch (74), the peg (72) has to force the spool (26) to rotate slightly against the biasing force applied to the spool (20) by the cutting lines (16,18). When normal lengths of line are extended from the cutting head (10) the biasing force on the spool is sufficient to overcome the biasing force on the pivotal arm (24) and thus hold the pivotal arm (24) stationary.

[0024] When one or both of the lines break, the rotational force applied to the spool (26) is reduced due to the reduction of the centrifugal force generated by the lines. Therefore, the biasing force on the pivotal arm (24) becomes greater than the retaining force and therefore the pivotal arm (24) is able to pivot due to the centrifugal force applied to the centre of mass of the arm (24). Once the peg has become disengaged from a notch (74), the spool (26) is able to rotate freely in relation to the cap (22). Therefore the spool (26) rotates relative to the cap (22) allowing more line (16,18) to feed out. As the spool (26) rotates, the peg (72) is guided along the trough (64) until it engages with the next notch (74). If sufficient line (16,18) has been fed out the retaining force will be sufficient to hold the peg (72) in an outward position in a notch (74). If not, the process is repeated until sufficient line (16,18) has been fed out.

[0025] The fact that the spool stores two lines instead of one has no effect on the operating method of the autofeed mechanism as described in EP 0 417 966 and EP 0 417 967.

[0026] The spool cassette mechanism comprises the cap (22), the pivotal arm (24) pivotally mounted within the cap (22), the spool (26) rotatably mounted on the spindle (44) of the cap with the peg (72) of the pivotal arm (24) in engagement with the wavy trough (64) formed on the base (66) of the spool (26), a vertical cross section of which is shown in Figure 19. The spool cassette mechanism can be clipped onto the base (20) of the cutting head (10) by deforming the two resilient clips (54) inwardly and pushing cassette into engagement with the base (20). The ribs (42) formed on the ends of the clips (54) engage in holes (40) formed within the base (20) of the cutting head (10) thus rigidly securing the cassette onto the base (20). When the cassette is mounted onto the base (20), the central core (34) of the base (20) locates within the spindle (44) of the cap (22), the ribs (42) of the clips (54) locating within the holes (40) in the base(20).

[0027] The operator then uses the string trimmer in the normal manner. When the line breaks the autofeed mechanism pays out more line in order to replenish the broken line (16,18). When the spool (24) is empty of line (80), an operator can detach the spool cassette mechanism by depressing the two resilient arms (54) inwardly at the finger grip portions (56) disengaging the ribs (42) from the corresponding holes (40) formed in the base of the cutting head thus removing the cap together with the spool and pivotal arm (24). The whole of the spool cassette mechanism is then discarded and a complete new spool cassette mechanism is clipped onto the base of the cutting head (10). The purpose of this design is to make the cutting head as a single disposable unit.

Claims

1. A cutting head for a string trimmer comprising:

a base (20);
a cap (22);
a spool (26) rotatably mounted in the cap (22);
an autofeed mechanism mounted within the cap and which interacts between the cap (22) and the spool (26);

wherein the cap (22) is releasably attachable to the base (20);
characterised in that:

the autofeed mechanism comprises a pivotal arm (24) pivotally mounted in the cap (22) and which engages with the spool (26),
the pivotal arm (24) is pivotally mounted on the base (46) of the cap (22) and engages with the underside (66) of the spool (26),
and the pivotal arm (24) comprises a peg (72) which engages with a wavy trough (64) formed on the underside (66) of the spool (26).

2. A cutting head as claimed in claim 1, wherein the cap (22) clips into the base (20).

3. A cutting head as claimed in claim 2, wherein the cap (22) comprises a first part and the base (20) comprises a second part wherein two resilient deformable arms (54) having ribs (42) formed on the end of the arms are mounted on one part and engage with corresponding holes (40) formed in the other part.

4. A cutting head as claimed in any one of claims 1 to 3, wherein the cap (22) comprises at least one aperture(50) through which, in use, an end of a cutting line (80) extends from the spool (26).

5. A cutting head as claimed in claim 4, wherein eyelets (52) form the apertures.

6. A cutting head as claimed in either claim 4 or claim 5, wherein there are two apertures (50) through each of which can extend a cutting line (80).

7. A string trimmer comprising a elongate shaft (2) and a cutting head (10) according to any one of the preceding claims rotatably mounted on one end of the elongate shaft.

8. A cassette mechanism capable of releasably attaching to a base of a cutting head on a string trimmer, the cassette mechanism comprising:

a cap (22);
a spool (26) rotatably mounted in the cap (22);
an autofeed mechanism mounted within the cap and which interacts between the cap (22) and the spool (26);

wherein the cap (22) is capable of releasably attaching to a base (20) of a cutting head of a string trimmer; **characterised in that**:

the autofeed mechanism comprises a pivotal arm (24) pivotally mounted in the cap (22) and which engages with the spool (26),
the pivotal arm (24) is pivotally mounted on the base (46) of the cap (22)and engages with the underside (66) of the spool (26),
and the pivotal arm (24) comprises a peg (72) which engages with a wavy trough (64) formed on the underside (66) of the spool (26).

9. A cassette mechanism as claimed in claim 8, wherein the cap (22) is capable of clipping into the base (20).

10. A cassette mechanism as claimed in claim 8, wherein the cap (22) comprises two resilient deformable arms (54) having ribs (42) formed on the end of the arms and which are capable of engaging with corresponding holes (40) formed in the base (20) of a cutting head of a string trimmer.

11. A cassette mechanism as claimed in claim 9, wherein the cap (22) comprises two holes which are capable of receiving two ribs formed on the ends of two deformable arms mounted on a base of a cutting head of a string trimmer.

12. A cassette mechanism as claimed in any one of claims 8 to 11, wherein the cap (22) comprises at least one aperture (50) through which, in use, an end of a cutting line (80) extends from the spool (26).

13. A cassette mechanism as claimed in claim 12, wherein eyelets (52) form the apertures.

14. A cassette mechanism as claimed in either claim 12 or claim 13, wherein there are two apertures (50) through each of which can extend a cutting line (80).

Patentansprüche

1. Schneidkopf für einen Fadenschneider mit
einer Basis (20),
einem Deckel (22),
einer drehbar in dem Deckel (22) angebrachten Rolle (26),
einem automatischen Zuführmechanismus, der in dem Deckel angebracht ist und zwischen dem Dekkel (22) und der Rolle (26) wirkt,
wobei der Deckel (22) lösbar an der Basis (20) angebracht werden kann,
dadurch gekennzeichnet, dass
der automatische Zuführmechanismus einen Schwenkarm (24) aufweist, der schwenkbar in dem Deckel (22) angebracht ist und mit der Rolle (26) eingreift,
der Schwenkarm (24) schwenkbar an der Basis (46) des Deckels (22) angebracht ist und mit der Unterseite (66) der Rolle (26) eingreift
und der Schwenkarm (24) einen Stift (72) aufweist, der mit einem wellenförmigen Kanal (64) eingreift, der an der Unterseite (66) der Rolle (26) ausgebildet ist.

2. Schneidkopf nach Anspruch 1, wobei der Deckel (22) in die Basis (20) einrastet.

3. Schneidkopf nach Anspruch 2, wobei der Deckel (22) einen ersten Teil und die Basis (20) einen zweiten Teil aufweist, wobei zwei elastisch verformbare Arme (54) mit Rippen (42), die an dem Ende der Arme ausgebildet sind, an einem Teil angebracht sind und mit entsprechenden Öffnungen (40), die in

dem anderen Teil ausgebildet sind, eingreifen.

4. Schneidkopf nach einem der Ansprüche 1 bis 3, wobei der Deckel (22) wenigstens eine Öffnung (50) aufweist, durch die sich bei der Benutzung ein Ende eines Schneidfadens (80) von der Rolle (26) erstreckt.

5. Schneidkopf nach Anspruch 4, wobei die Öffnungen durch Ösen (52) gebildet werden.

6. Schneidkopf nach Anspruch 4 oder Anspruch 5, wobei es zwei Öffnungen (50) gibt, durch die sich ein Schneidfaden (80) erstrecken kann.

7. Fadenschneider mit einem länglichen Schaft (2) und einem Schneidkopf (10) nach einem der vorhergehenden Ansprüche, der drehbar an einem Ende des länglichen Schafts angebracht ist.

8. Kassettenmechanismus, der lösbar an einer Basis eines Schneidkopfes an einem Fadenschneider angebracht werden kann, mit
einem Deckel (22),
einer drehbar in dem Deckel (22) angebrachten Rolle (26),
einem automatischen Zuführmechanismus, der in dem Deckel angebracht ist und zwischen dem Dekkel (22) und der Rolle (26) wirkt,
wobei der Deckel (22) lösbar an einer Basis (20) eines Schneidkopfes eines Fadenschneiders angebracht werden kann,
dadurch gekennzeichnet, dass
der automatische Zuführmechanismus einen schwenkbaren Arm (24) aufweist, der schwenkbar in dem Deckel (22) angebracht ist und mit der Rolle (26) eingreift,
der schwenkbare Arm (24) schwenkbar an der Basis (46) des Deckels (22) angebracht ist und mit der Unterseite (66) der Rolle (26) eingreift
und der schwenkbare Arm (24) einen Stift (72) aufweist, der mit einem wellenförmigen Kanal (64) eingreift, der an der Unterseite (66) der Rolle (26) ausgebildet ist.

9. Kassettenmechanismus nach Anspruch 8, wobei der Deckel (22) in die Basis (20) eingerastet werden kann.

10. Kassettenmechanismus nach Anspruch 8, wobei der Deckel (22) zwei elastisch verformbare Arme (54) mit Rippen (42), die an den Enden der Arme ausgebildet sind und die mit entsprechenden Öffnungen (40), die in der Basis (20) eines Schneidkopfes eines Fadenschneiders ausgebildet sind, eingreifen können, aufweist.

11. Kassettenmechanismus nach Anspruch 9, wobei der Deckel (22) zwei Öffnungen aufweist, die zwei Rippen aufnehmen können, die an den Enden von zwei verformbaren Armen ausgebildet sind, die an einer Basis eines Schneidkopfes eines Fadenschneiders angebracht sind.

12. Kassettenmechanismus nach einem der Ansprüche 8 bis 11, wobei der Deckel (22) wenigstens eine Öffnung (50) aufweist, durch die sich bei der Benutzung ein Ende eines Schneidfadens (80) von der Rolle (26) erstreckt.

13. Kassettenmechanismus nach Anspruch 12, wobei die Öffnungen durch Ösen (52) gebildet werden.

14. Kassettenmechanismus nach Anspruch 12 oder 13, wobei es zwei Öffnungen (50) gibt, durch die sich ein Schneidfaden (80) erstrecken kann.

Revendications

1. Tête de coupe pour une tondeuse à fil, comprenant :

une base (20) ;
un capot (22) ;
une bobine (26) montée à rotation dans le capot (22) ;
un mécanisme d'alimentation automatique, monté à l'intérieur du capot et interagissant entre le capot (22) et la bobine (26) ;

dans laquelle le capot (22) est susceptible d'être fixé de façon amovible à la base (20) ;
caractérisé en ce que :

le mécanisme d'alimentation automatique comprend un bras pivotant (24), monté à pivotement dans le capot (22) et venant en prise avec la bobine (26),
le bras pivotant (24) est monté à pivotement sur la base (46) du capot (22) et vient en prise avec la face inférieure (66) de la bobine (26),
et le bras pivotant (24) comprend un téton (72) venant en prise avec un canal à tracé ondulé (64) formé sur la face inférieure (66) de la bobine (26).

2. Tête de coupe selon la revendication 1, dans laquelle le capot (22) se monte dans la base (20) par encliquetage.

3. Tête de coupe selon la revendication 2, dans laquelle le capot (22) comprend une première partie et la base (20) comprend une deuxième partie, dans laquelle deux bras (54), déformables élastiquement, ayant des nervures (42) formées sur l'extrémité des bras, sont montés sur une partie et viennent en prise avec

des trous (40) correspondants formés dans l'autre partie.

4. Tête de coupe selon l'une quelconque des revendications 1 à 3, dans laquelle le capot (22) comprend au moins une ouverture (50) par laquelle, en utilisation, une extrémité d'une ligne de coupe (80) s'étend, depuis la bobine (26).

5. Tête de coupe selon la revendication 4, dans laquelle des oeillets (52) forment les ouvertures.

6. Tête de coupe selon l'une de la revendication 4 ou de la revendication 5, dans laquelle deux ouvertures (50) sont prévues à travers chacune desquelles peut s'étendre une ligne de coupe (80).

7. Tondeuse à fil comprenant un arbre (2) allongé et une tête de coupe (10) selon l'une quelconque des revendications précédentes, montée à rotation sur une extrémité de l'arbre allongé.

8. Mécanisme à cassette, susceptible d'être fixé de façon amovible à une base d'une tête de coupe d'une tondeuse à fil, le mécanisme à cassette comprenant :

un capot (22) ;
une bobine (26) montée à rotation dans le capot (22) ;
un mécanisme d'alimentation automatique, monté à l'intérieur du capot et interagissant entre le capot (22) et la bobine (26) ;

dans lequel le capot (22) est susceptible d'être fixé de façon amovible à une base (20) d'une tête de coupe d'une tondeuse à fil ;
caractérisé en ce que :

le mécanisme d'alimentation automatique comprend un bras pivotant (24), monté à pivotement dans le capot (22) et venant en prise avec la bobine (26),
le bras pivotant (24) est monté à pivotement sur la base (46) du capot (22) et vient en prise avec la face inférieure (66) de la bobine (26),
et le bras pivotant (24) comprend un téton (72), venant en prise avec un canal à tracé ondulé (64) formé sur la face inférieure (66) de la bobine (26).

9. Mécanisme à cassette selon la revendication 8, dans lequel le capot (22) est susceptible d'être monté dans la base (20), par encliquetage.

10. Mécanisme à cassette selon la revendication 8, dans lequel le capot (22) comprend deux bras (54) déformables élastiquement, ayant des nervures (42) formées sur l'extrémité des bras et susceptibles de venir en prise avec des trous correspondants formés dans la base (20) d'une tête de coupe d'une tondeuse à fil.

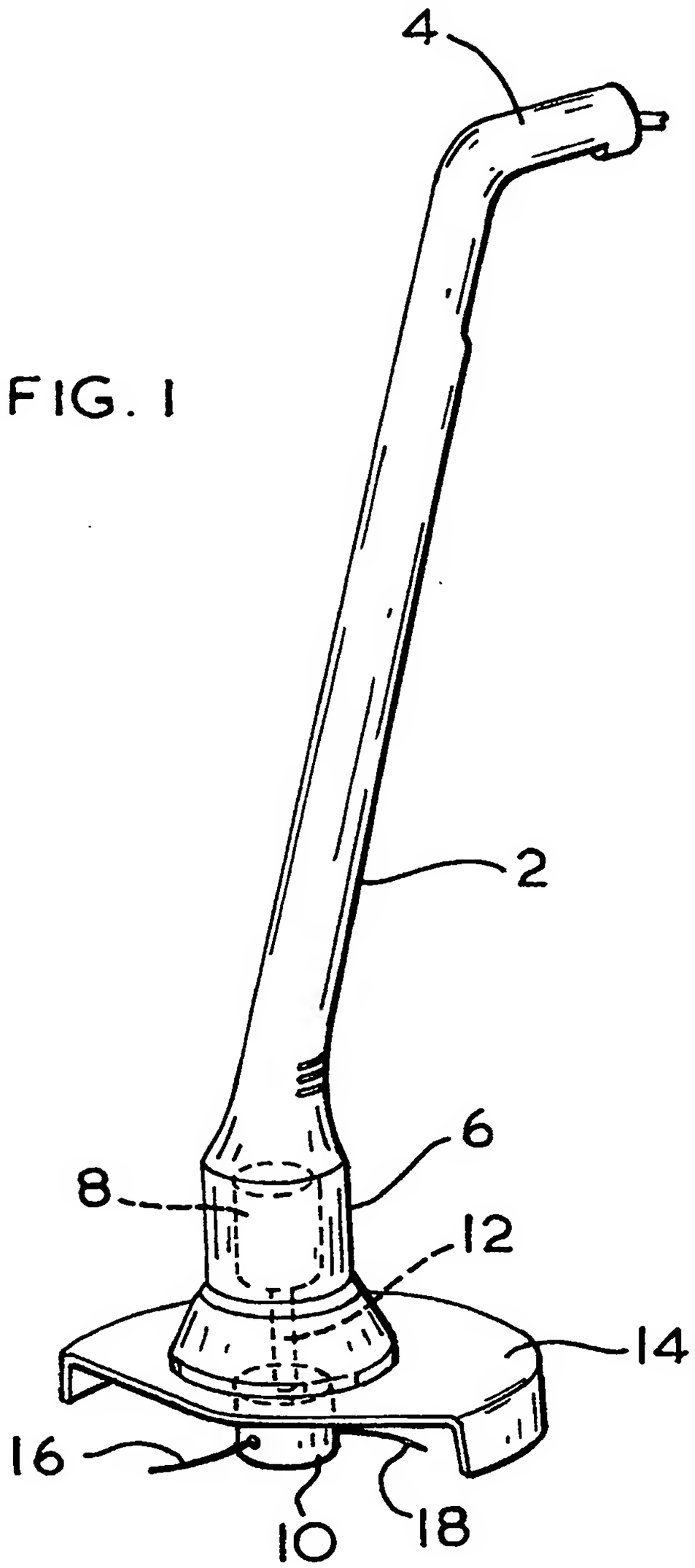
11. Mécanisme à cassette selon la revendication 9, dans lequel le capot (22) comprend deux trous, susceptibles de recevoir deux nervures formées sur les extrémités de deux bras déformables, montés sur une base d'une tête de coupe d'une tondeuse à fil.

12. Mécanisme à cassette selon l'une quelconque des revendications 8 à 11, dans lequel le capot (22) comprend au moins une ouverture (50), par laquelle, en utilisation, une extrémité d'une ligne de coupe (80) s'étend depuis la bobine (26).

13. Mécanisme à cassette selon la revendication 12, dans lequel des oeillets (52) forment les ouvertures.

14. Mécanisme à cassette selon la revendication 12 ou 13, dans lequel sont prévues deux ouvertures (50), par chacune desquelles peut s'étendre une ligne de coupe (80).

FIG. 1



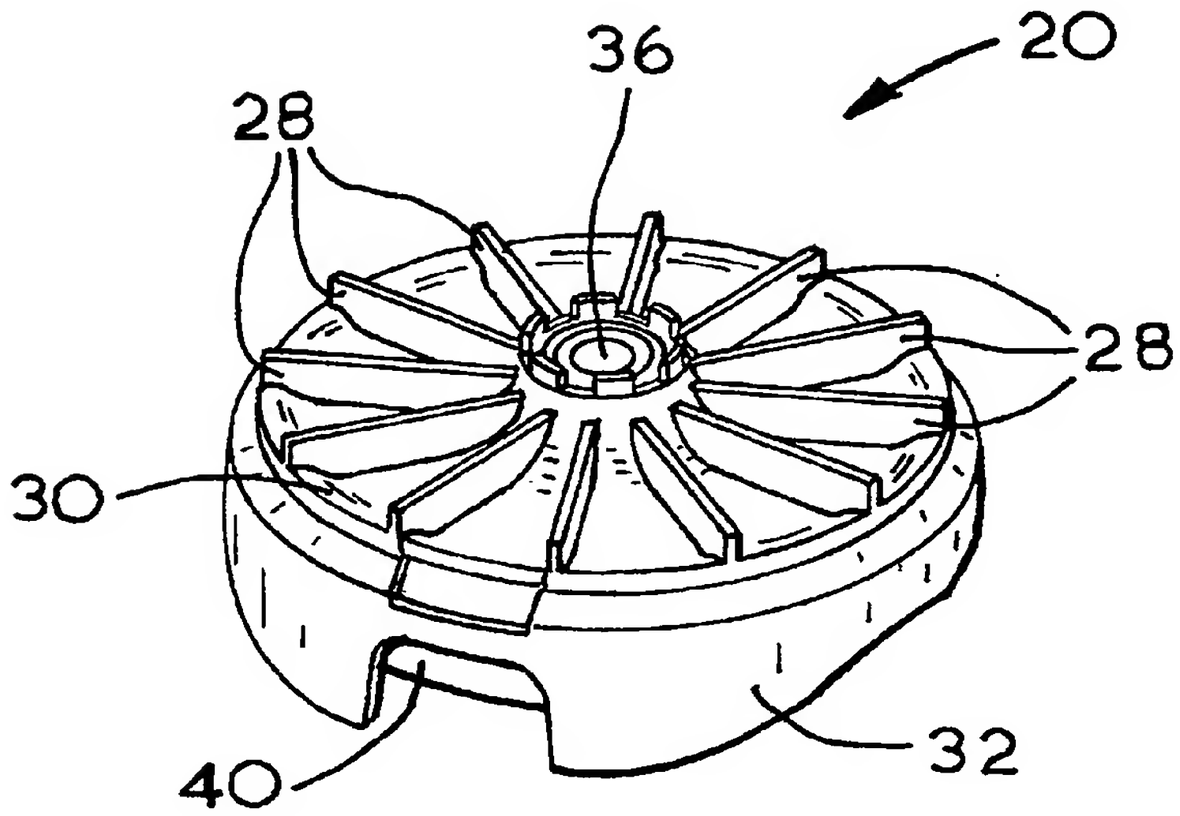


FIG. 2

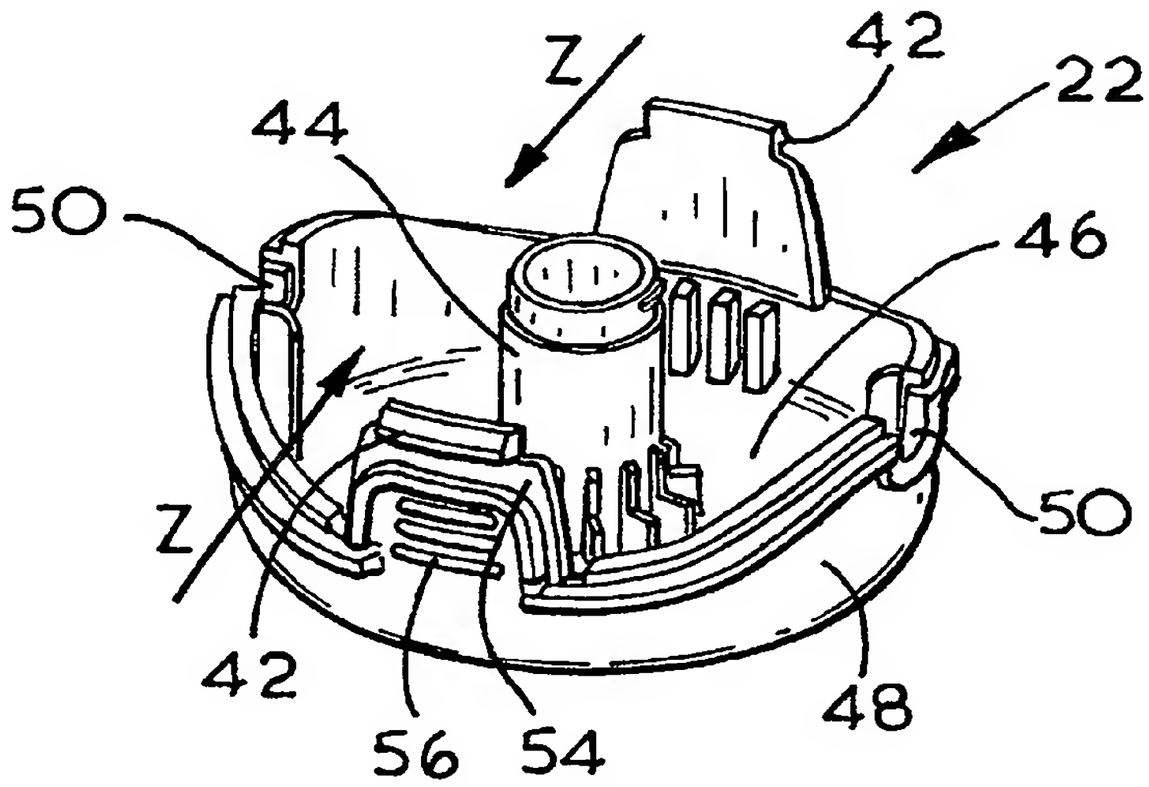


FIG. 3

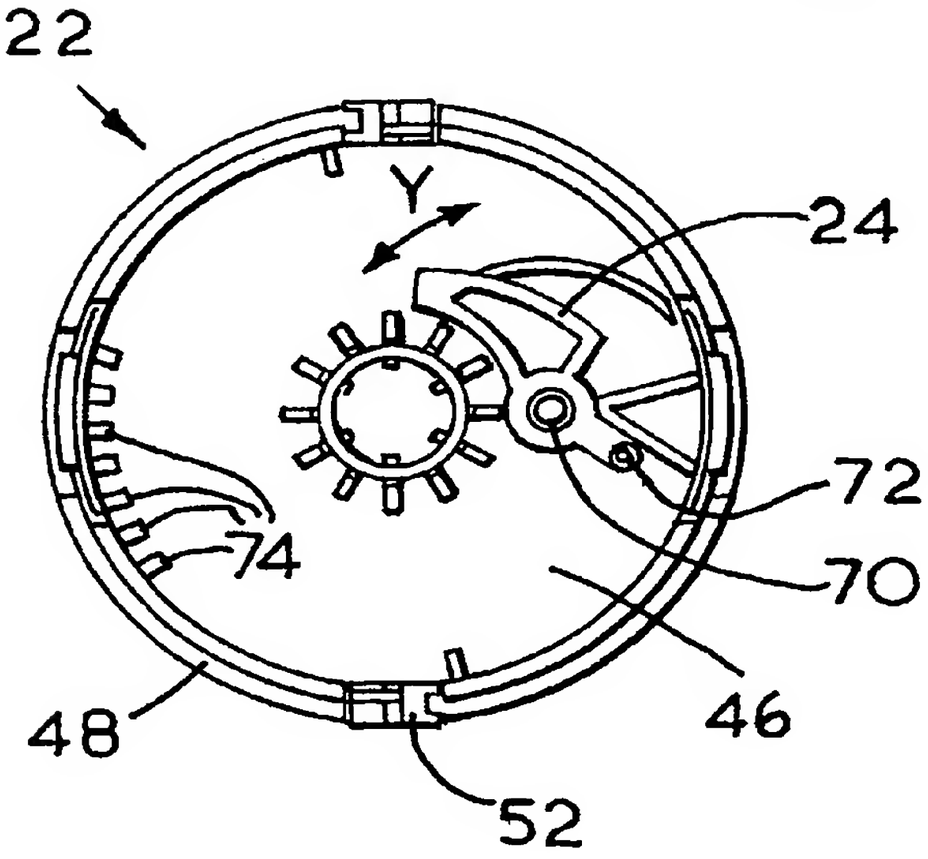


FIG. 4

FIG. 5

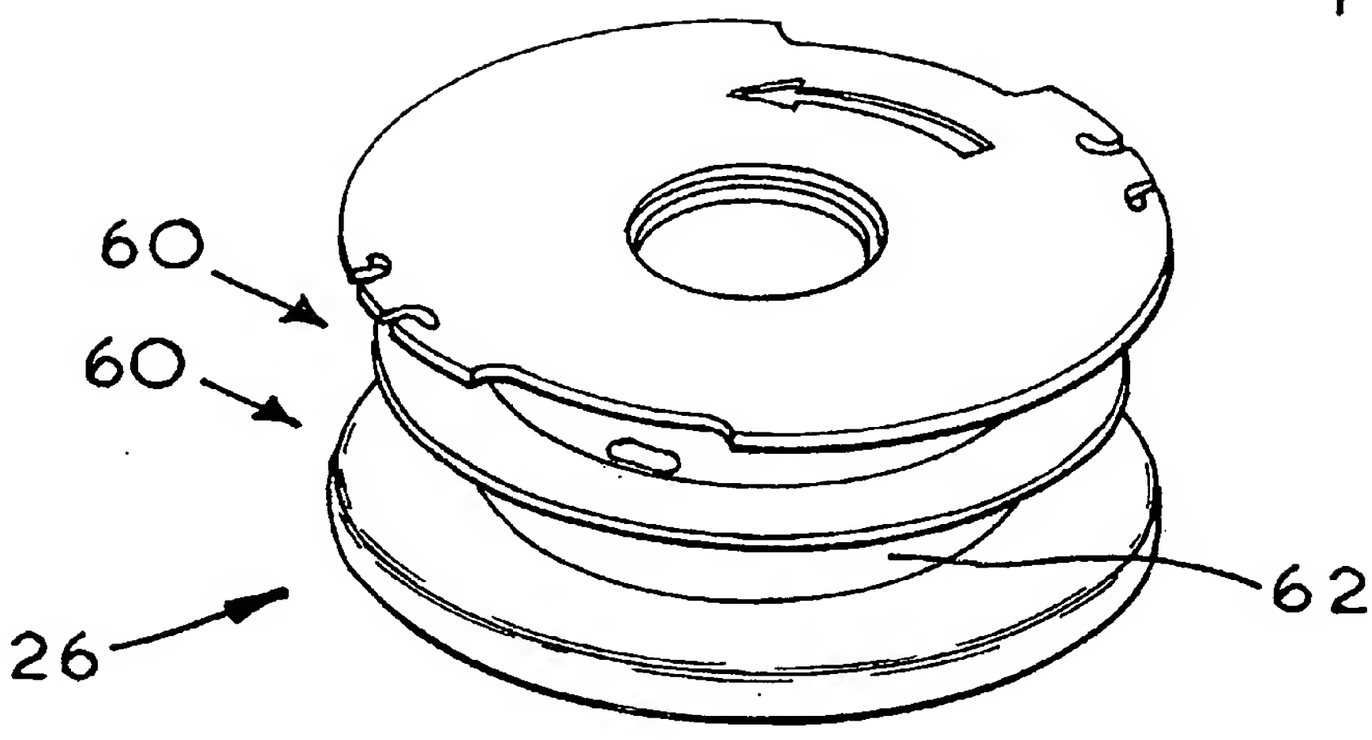
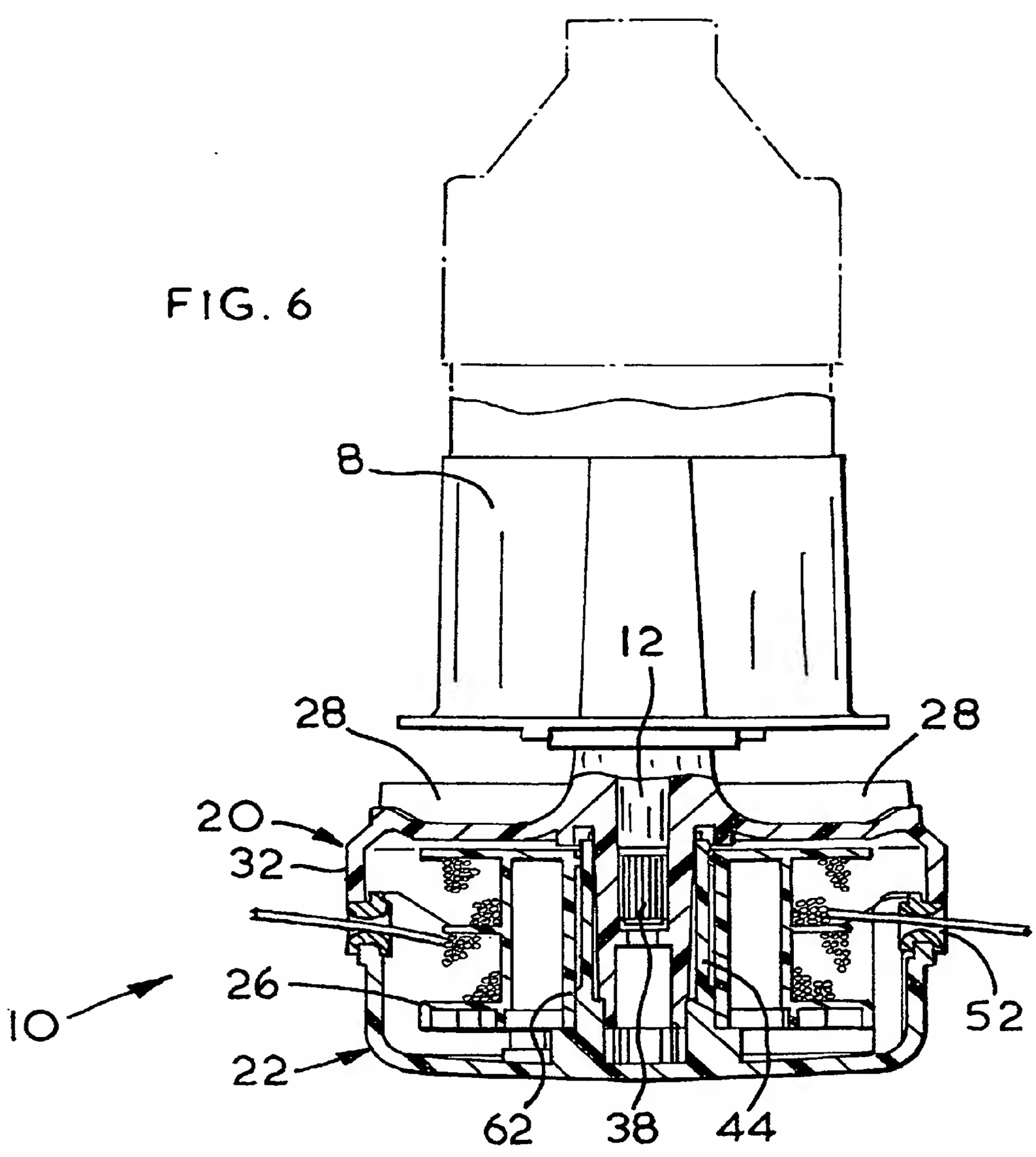


FIG. 6



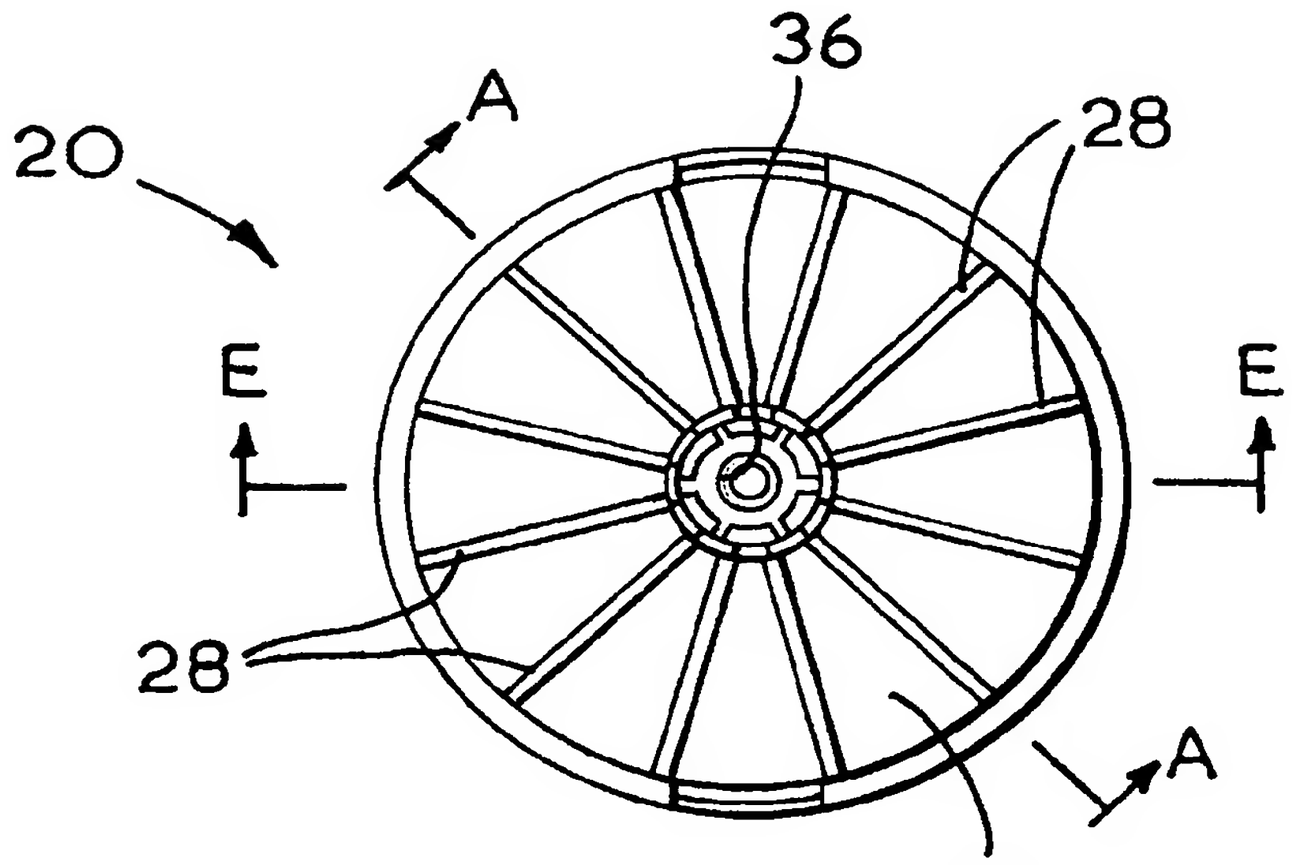


FIG.7

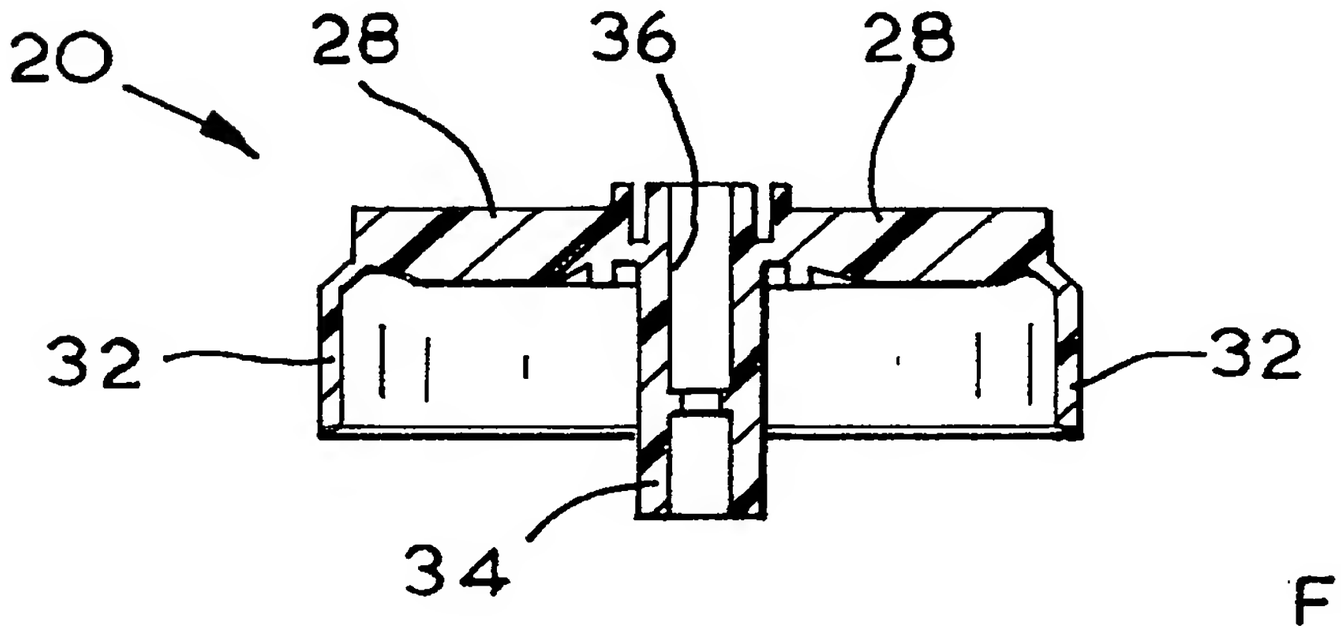


FIG. 8

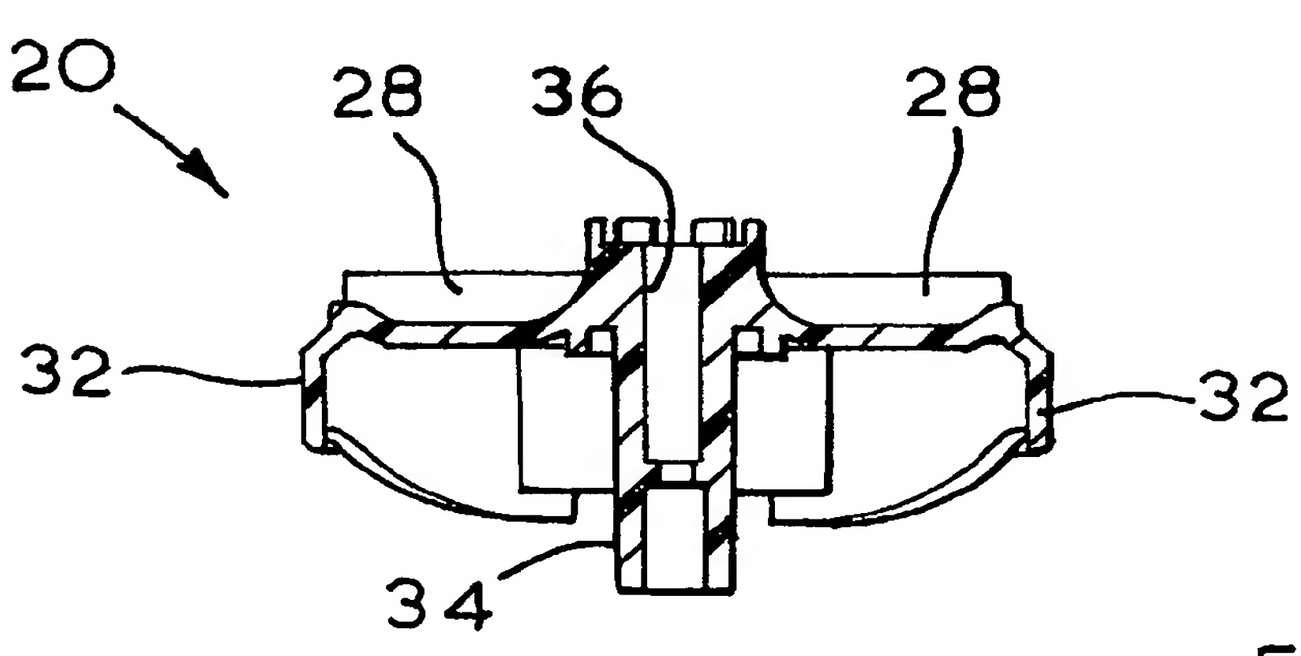


FIG. 9

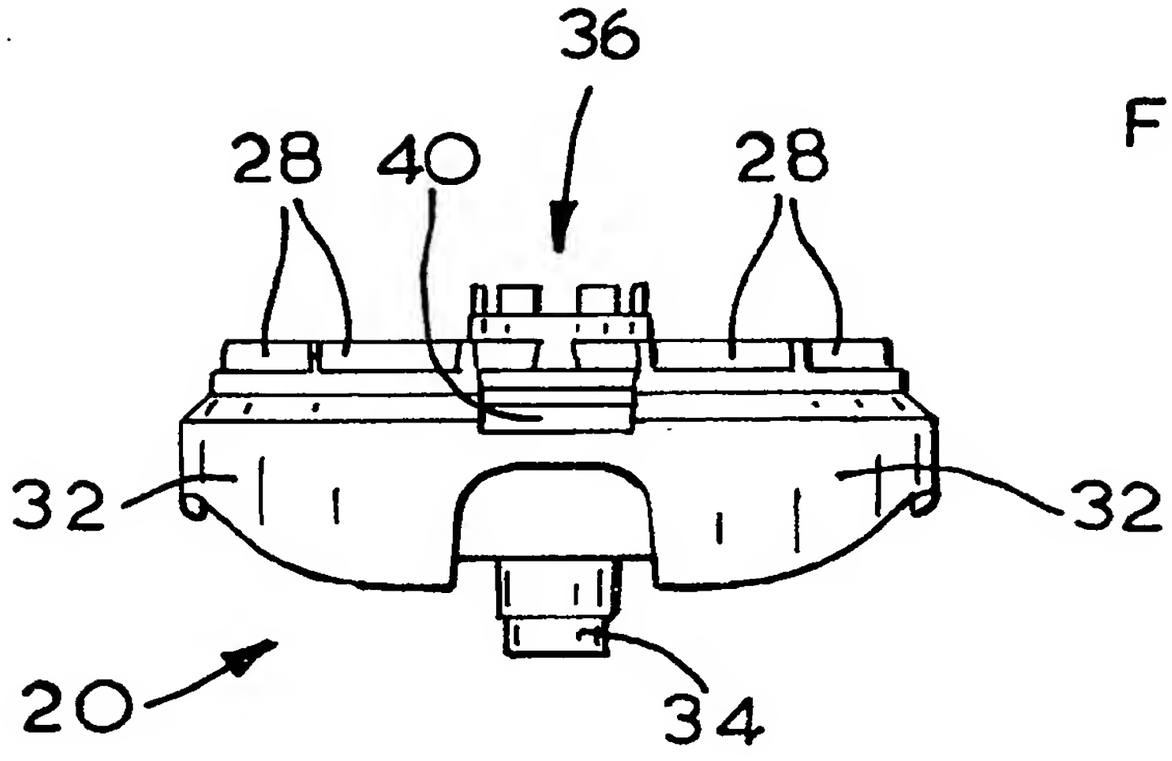


FIG. 10

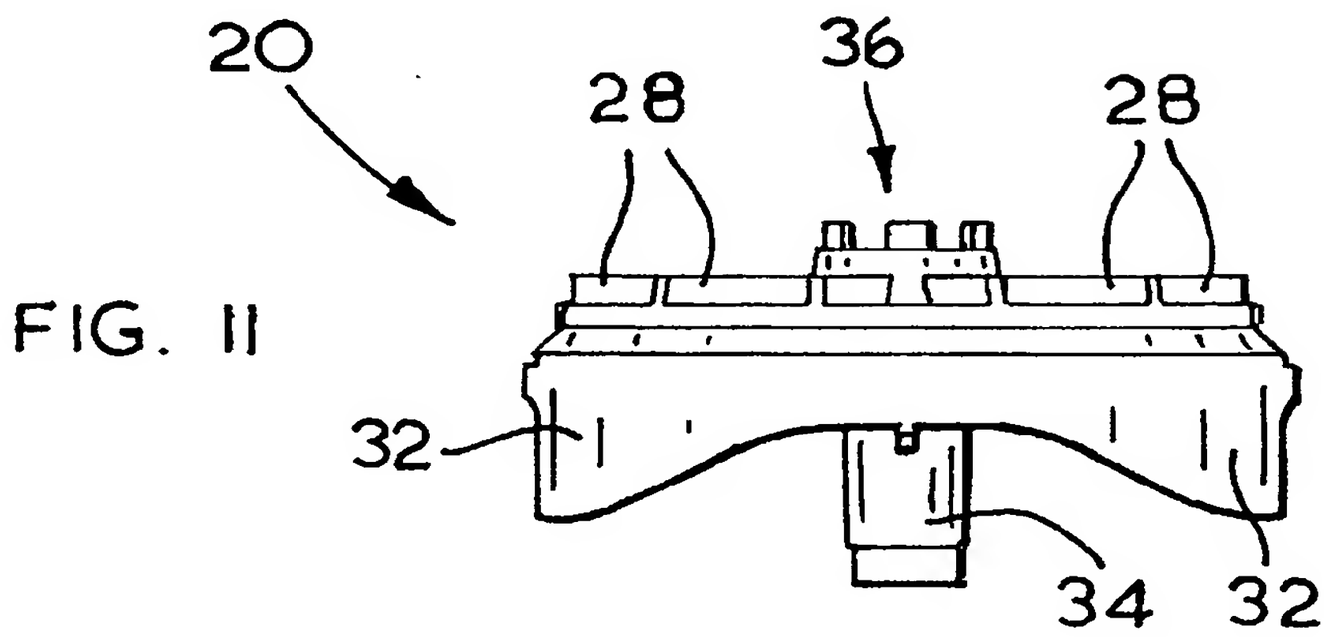


FIG. 11

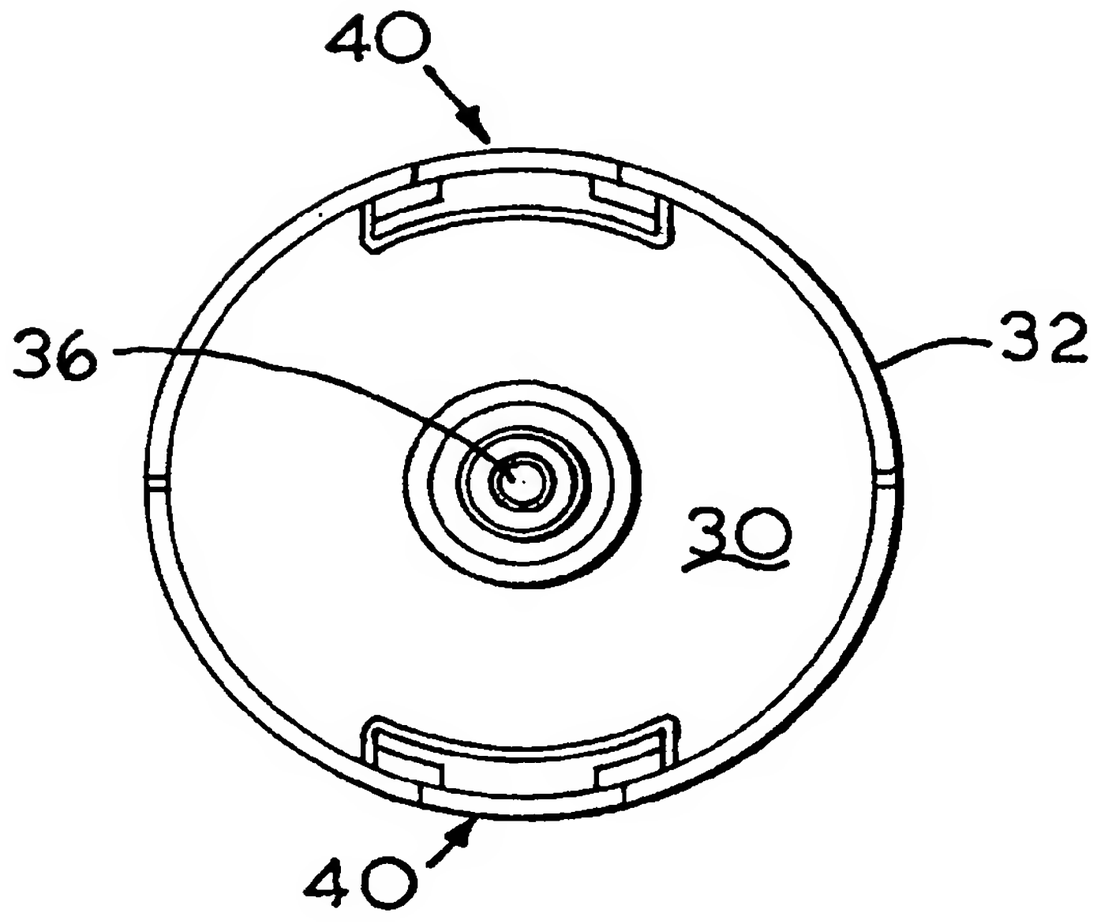


FIG. 12

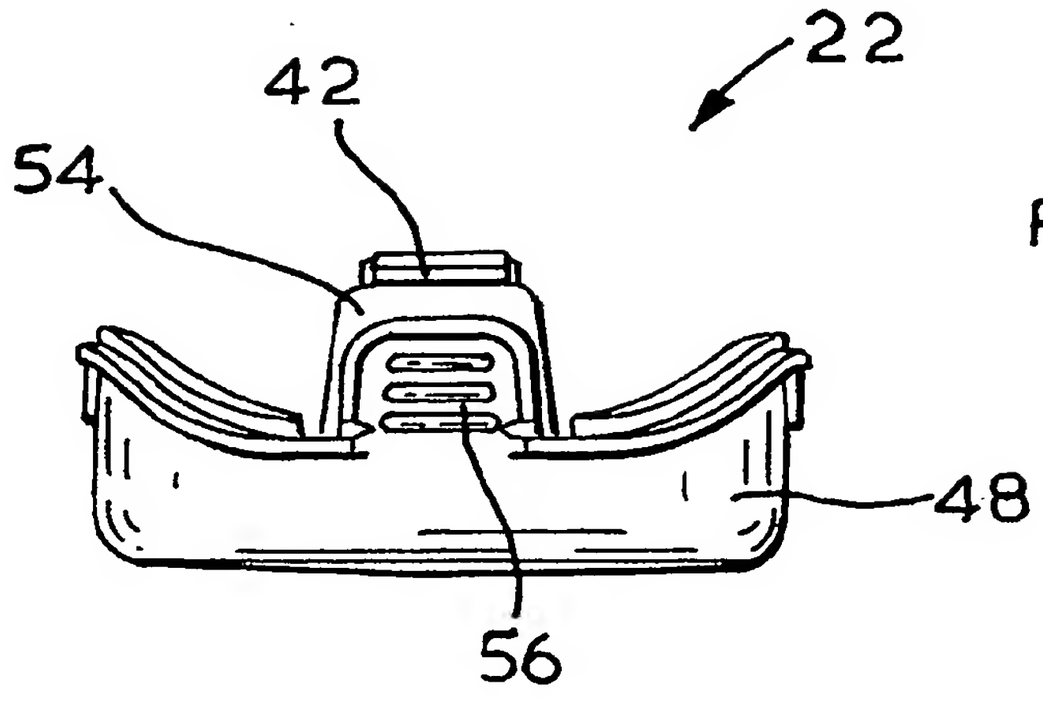
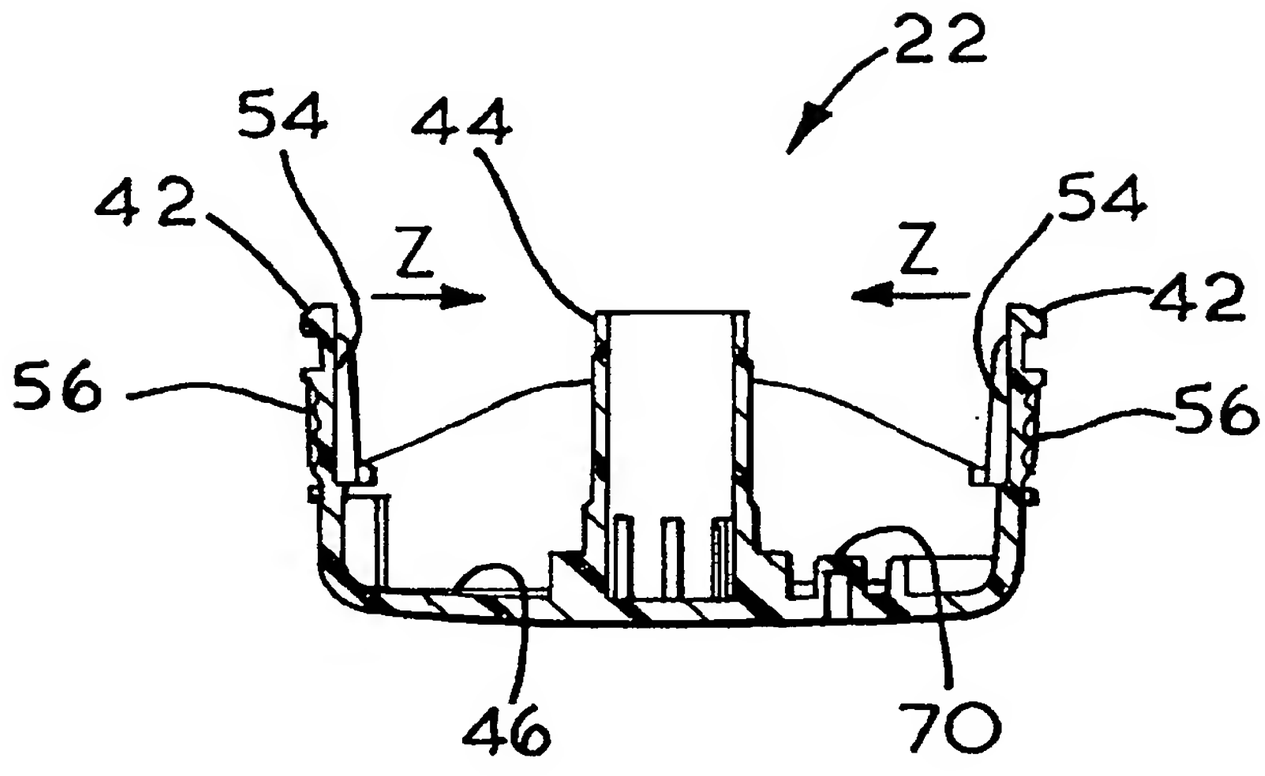


FIG. 13

FIG. 14



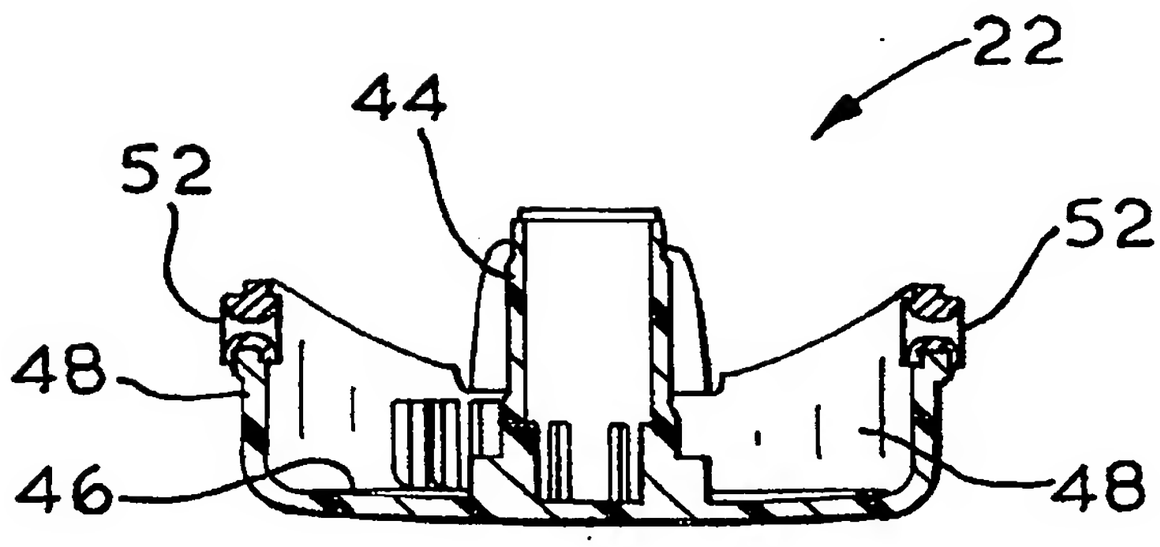


FIG. 15

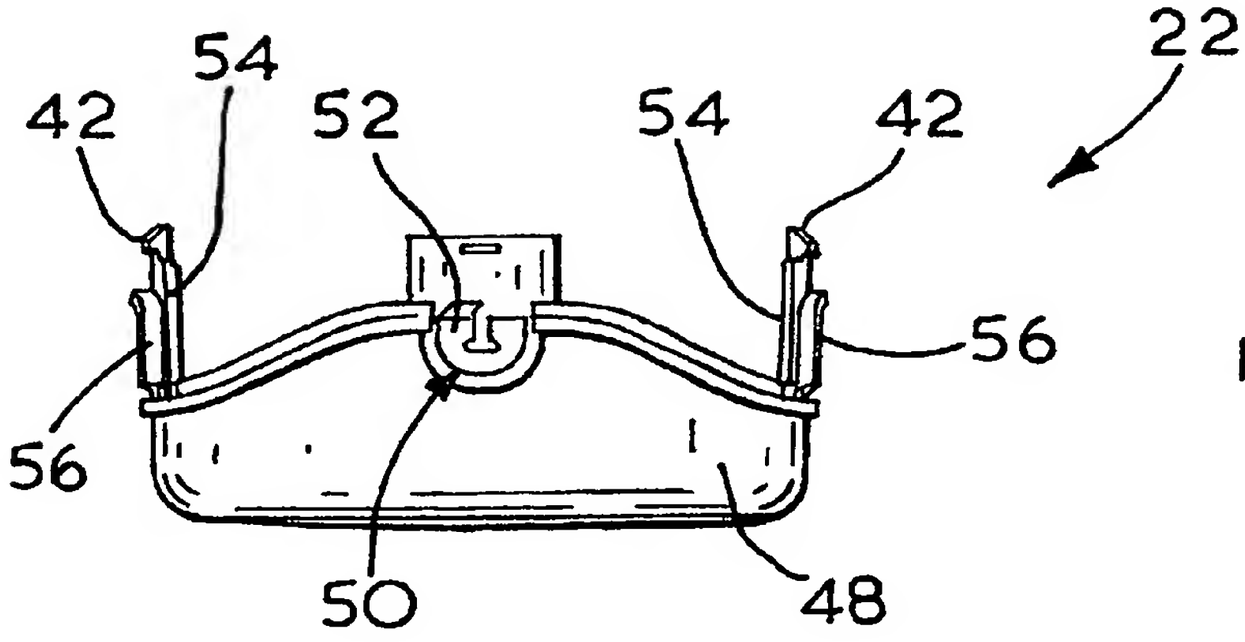


FIG. 16

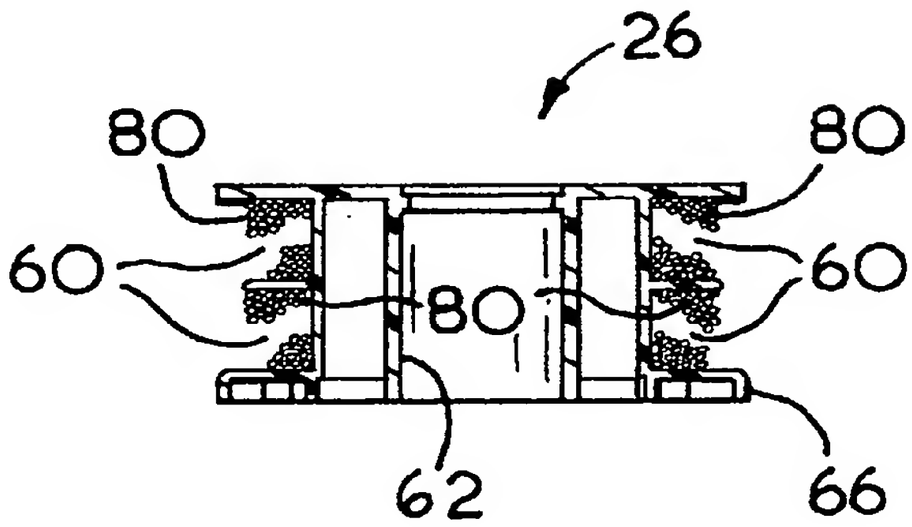


FIG. 17

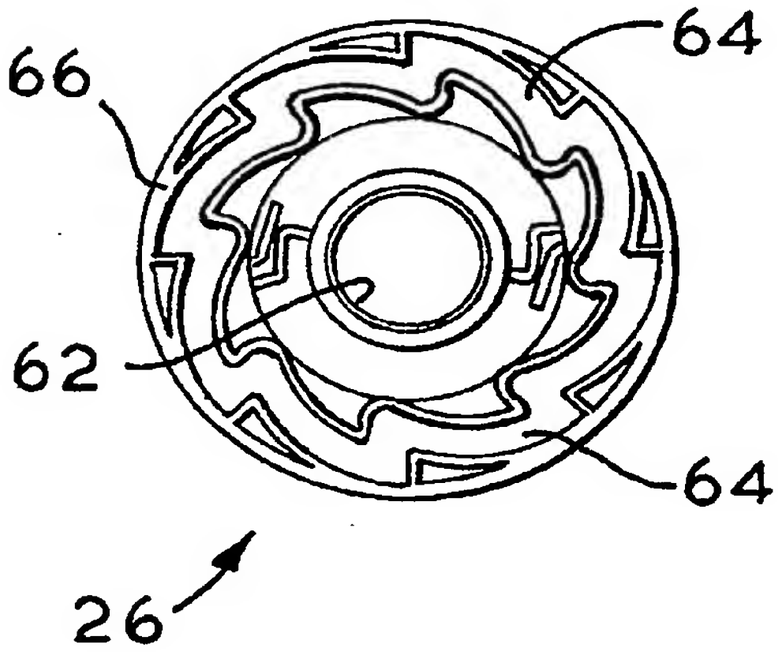


FIG. 18

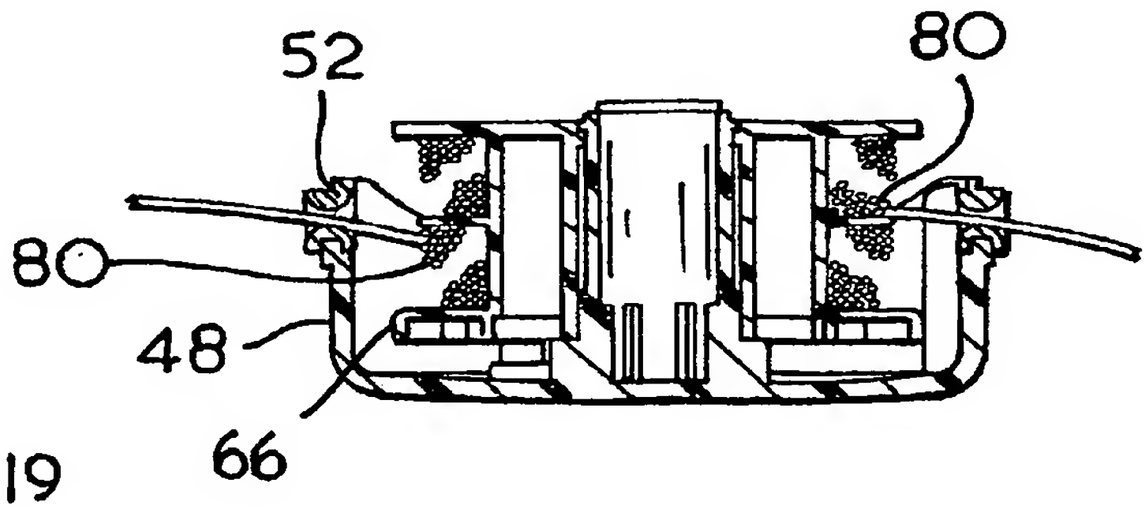


FIG. 19

REFERENCES CITED IN THE DESCRIPTION

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- EP 0838144 A **[0002]**
- US 5522141 A **[0003]**